

U.S.C.G. Merchant Marine Exam
Mate Less than 500-1600 Gross Registered Tons
Q331 Great Lakes Topics
(Sample Examination)

Choose the best answer to the following Multiple-Choice Questions.

1. What is the center of flotation of a vessel?
- A. The point at which all the vertical downward forces of weight are considered to be concentrated
 - B. The center of gravity of the water plane
 - C. The center of volume of the immersed portion of the vessel
 - D. The point at which all the vertical upward forces of buoyancy are considered to be concentrated

Correct answer: B

2. You are reading the draft marks as shown in illustration D032DG. The water level forward leaves about 4 inches of the 11 visible, and the water level aft is at the top of the 10. What is the mean draft?
- A. 10'-06"
 - B. 10'-08"
 - C. 10'-10"
 - D. 11'-02"

Correct answer: C

3. Fog can form in any season on the Great Lakes, but it is most likely to occur over open waters in which period?
- A. Autumn and early winter
 - B. Summer and early autumn
 - C. Spring and early summer
 - D. Winter and early spring

Correct answer: C

4. Which of the Great Lakes is generally the last to reach its seasonal low and seasonal high-water marks?
- A. Lake Ontario
 - B. Lake Michigan
 - C. Lake Superior
 - D. Lake Huron

Correct answer: C

5. Your vessel is on a voyage from Ogdensburg, NY, to Chicago, IL, via the Great Lakes. The date is October 3 of the current year. If your vessel is subject to the load line requirements, using illustration D031DG below, to which of her marks should she be loaded?
- A. Fresh water - Intermediate
 - B. Salt water - Intermediate
 - C. Fresh water - Winter
 - D. Salt water - Winter

Correct answer: A

6. Assuming that the recommended hatch loading sequence is followed, how many long tons of iron ore may be loaded through hatch No. 3 while using a single belt loader to arrive at a desired mean keel draft of 27'-07"? (Use the Guidance Manual for Loading M.V. GRAND HAVEN.)
- A. 2500 tons
 - B. 2550 tons
 - C. 2600 tons
 - D. 2650 tons

Correct answer: A

7. Which statement is FALSE with regard to the Great Lakes Light List?
- A. The Light List should be corrected each week from the appropriate Notice to Mariners.
 - B. Volume VII does not include information on Class III private aids to navigation.
 - C. The Light List does not contain information on any of the navigational aids maintained by Canada.
 - D. The Light List does not include Coast Guard mooring buoys, special purpose buoys, or buoys marking fish net areas.

Correct answer: C

8. What is the name given to the strake on each side of the keel?
- A. Gatewood strake
 - B. Garboard strake
 - C. Sheer strake
 - D. Insulation strake

Correct answer: B

9. Yawing is angular motion of the vessel about what axis?
- A. Vertical
 - B. Transverse
 - C. Centerline
 - D. Longitudinal

Correct answer: A

10. You are on an ice-reinforced vessel about to enter pack ice. Which action should you take?
- A. Enter the pack on the windward side where there is a well-defined ice edge
 - B. Look for areas of rotten ice and enter perpendicular to the ice edge
 - C. Trim to an even keel or slightly down by the bow to take maximum benefit of the ice reinforcement
 - D. Take maximum advantage of coastal leads caused by offshore winds

Correct answer: B

11. A vessel operating on the Great Lakes, and whose position is south of an approaching eastward-moving storm center, would NOT experience which condition?
- A. Either rain or snow
 - B. The lowering clouds and drizzle
 - C. A falling barometer
 - D. A southwest to west wind

Correct answer: D

12. A ship's forward draft is 22'-04" and its after draft is 23'-00". The draft amidships is 23'-04". Using this information, where is the concentration of weight on the vessel?
- A. At the ends
 - B. At the bow
 - C. Amidships
 - D. In the lower holds

Correct answer: C

13. The forward draft of your ship is 27'-11" and the after draft is 29'-03". The draft amidships is 28'-05". Which is TRUE of your vessel?
- A. The vessel is hogged
 - B. The vessel is trimmed by the head
 - C. The vessel is sagged
 - D. The vessel is listed

Correct answer: A

14. How are nautical charts published by the Canadian Hydrographic service which are referenced in the United States Coast Pilot identified?
- A. The abbreviation "can" preceding the chart number
 - B. The letter "C" in parentheses following the chart number
 - C. An asterisk preceding the chart number
 - D. A footnote number

Correct answer: C

15. Your vessel rolls slowly and sluggishly. What does this indicate about the vessel?
- A. It is taking on water
 - B. It has off-center weights
 - C. It has a greater draft forward than aft
 - D. It has poor stability

Correct answer: D

16. Which statement is TRUE with respect to the load line markings shown in illustration D031DG below?

- A. U.S. flag vessels less than 100 feet in length and less than 200 gross tons are not required to show these marks.
- B. A vessel displaying these marks may load in the salt waters of the St. Lawrence River.
- C. U.S. flag vessels of 100 gross tons and upward must show these marks.
- D. Vessels engaged solely on Great Lakes voyages are not required to show these marks.

Correct answer: B

17. Which statement concerning storm surges on the Great Lakes is FALSE?

- A. They are common along the deeper areas of the lakes.
- B. They cause rapid differences in levels between one end of the lake and the other.
- C. The greatest water level difference occurs when the wind is blowing along the axis of the lake.
- D. If the wind subsides rapidly, a seiche effect will most likely occur.

Correct answer: A

18. How should a vessel that is being assisted by an icebreaker indicate that it is ready to cast off the towline (if one is used)?

- A. Sound five short blasts of his whistle
- B. Sound one prolonged blast of the whistle
- C. Display the code letter "Y" (Yankee)
- D. Display code numeral "5"

Correct answer: C

19. You are transiting the Straits of Mackinac by way of an improved channel. You have information which indicates that the channel's Federal project depth is 28 ft. Which of the following statements is true with regards to this channel?

- A. The design dredging depth of the channel is 28 ft.
- B. The least depth within the limits of the channel is 28 ft.
- C. The channel has 28 ft. in the center but lesser depths may exist in the remainder of the channel.
- D. The maximum depth which may be expected within the limits of the channel is 28 ft.

Correct answer: A

20. Which is the term given to the joint formed when two steel plates are placed end-to-end?

- A. Bevel
- B. Seam
- C. Butt
- D. Bond

Correct answer: C

21. Which term defines when a boat turns broadside to heavy seas and winds, thus exposing the boat to the danger of capsizing?

- A. Broached
- B. Trimmed
- C. Yawed
- D. Pitchpoled

Correct answer: A

22. Which term is used to describe the horizontal port or starboard movement of a vessel?

- A. Heave
- B. Yaw
- C. Sway
- D. Surge

Correct answer: C

23. When a vessel is stationary and in a hogging condition, the main deck is under which type of stress?

- A. Shear
- B. Compression
- C. Tension
- D. Racking

Correct answer: C

24. If your propeller is racing in rough weather, which action should you take?

- A. Decrease your engine speed
- B. Increase your engine speed
- C. Ignore it, this is acceptable in rough weather
- D. Stop your engine until the rough weather passes

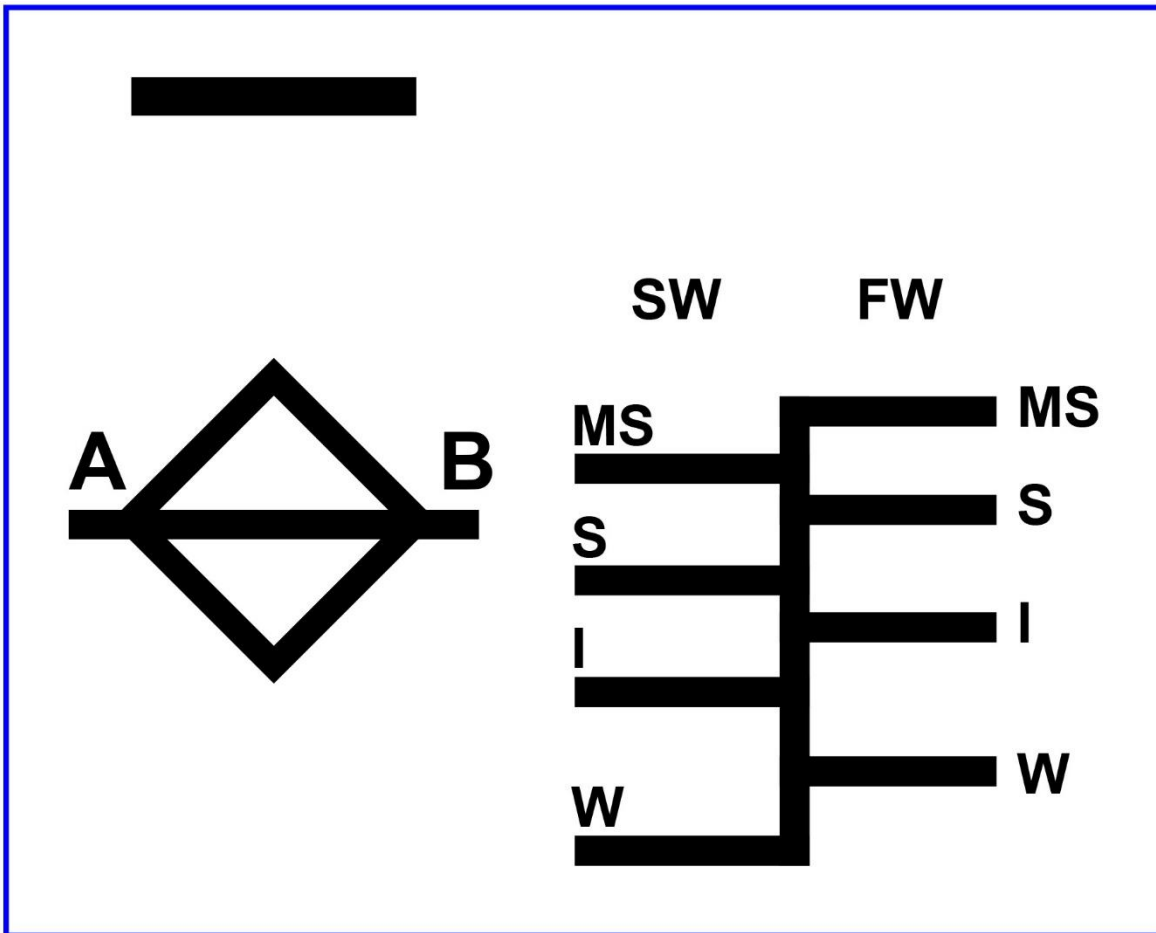
Correct answer: A

25. Ice concentration is measured in tenths. What concentration range of ice corresponds to 1- 3 tenths?

- A. Open Pack
- B. Close Pack
- C. Very Open Pack
- D. Very Close Pack

Correct answer: C

D031DG



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D032DG

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**AFT DRAFT
MARKS**

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**FWD DRAFT
MARKS**